

*My ECCA experience was one of the most valuable of my academic career. Since the original intended image correction method was not successful across all images of interest, we set out to develop another method to minimize atmospheric scatter in orbital CaSSIS observations in order to compare different images that have varying optical depths, and thus characterize the surface. To do so, Dr. Nicolas Thomas and I spent the time deriving and testing an equation that relates reflectance observed by rover cameras to that observed by CaSSIS. Using principles of radiative transfer, we have been able to effectively correct CaSSIS images for atmospheric scatter. I learned an incredible amount about photometry and instrumentation from Dr. Thomas. Future work entails applying the method to other rover landing sites like Jezero crater and Meridiani Planum. We are also actively trying to plan simultaneous observations using CaSSIS and Mastcam-Z on the Perseverance rover to further improve the method. I was fortunate to meet other faculty members, folks in operations roles, and other students on the CaSSIS team who provided excellent insight into the data and research ideas.*

